

Abstract

The package crefthe provides a command `\crefthe` parallel to cleveref's `\cref` for handling definite articles properly (especially for the article contractions in some European languages).

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The motivation

1 By default, with cleveref's `\cref` to reference theorem-like environments, the names do not
 2 contain definite articles. While this might be acceptable for English, it is certainly not good
 3 enough for languages such as French, Italian, Portuguese, Spanish, etc. – in these cases there
 4 shall be grammatical errors and would give you a strong feeling that it is machine-generated.

5 However, even if we manually add the definite articles to the names, there would still be
 6 other problems. As an example, if we define the French names to be:

```
\crefname{theorem}{le théorème}{les théorèmes}
\crefname{proposition}{la proposition}{les propositions}
```

7 then when one writes (which means “*We can deduce this from ...*”)

```
On peut le déduire de \cref{thm1,thm2,prop3}.
```

8 the result would be:

```
On peut le déduire de les théorèmes 1 et 2 et la proposition 3.
```

9 which is wrong, as the correct result should be:

```
On peut le déduire des théorèmes 1 et 2 et de la proposition 3.
```

10 `\cref` cannot handle such cases automatically — that is when `\crefthe` comes into play.

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The usage2.1 | How to load it?

11 Simply load the package with:

```
\usepackage{crefthe}
```

TIP

- Since `crefthe` uses `cleveref` internally, it should usually be placed at the last of your preamble, and notably, after `varioref` and `hyperref`.
- To handle article contractions correctly, `\crefthe` shall detect the current language, thus you need to use packages such as `babel` or `polyglossia` to set your languages, and use commands like `\selectlanguage` to select them appropriately.

2.2 | How to use it?

- 1 Before everything, you need to define the names, which can be done with `\crefthename`.
2 Its syntax is similar to `\crefname`, but now you can specify the definite articles, for example:

```
\crefthename{theorem}[le]{théorème}[les]{théorèmes}
```

TIP

The `\crefthenames` should be placed in your preamble, otherwise the `\cref` formats will not be set. These names can, however, be reset within the document body.

- 3 Then you can use the command `\crefthe` as follows:

```
4 \crefthe[prep]{labels}
```

- 5 – This will pass the preposition *prep* to the definite articles that follows. Its behavior
6 depends on the current language (for example, in Spanish, *prep* is passed only to the
7 first definite article, while in French it is passed to everyone).

```
8 \crefthe- [prep]{labels} and \crefthe+ [prep]{labels}
```

- 9 – In case the automatic version does not meet your needs, here are two manual ones.
10 The - version passes the preposition *prep* only to the first definite article, while the +
11 version passes *prep* to every definite article.

TIP

- There is also a starred version `\crefthe*` for generating the same referencing text without creating hyperlinks.
- The name-only relatives are also available: `\namecrefthe` and `\namecrefsthe`.

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Example

- 12 Let us come back to the example at the beginning, now you can do this:

```
\crefthename{theorem}[le]{théorème}[les]{théorèmes}  
\crefthename{proposition}[la]{proposition}[les]{propositions}
```

- 13 And the sentence shall be written as:

```
On peut le déduire \crefthe[de]{thm1,thm2,prop3}.
```

- 14 which would result in (provided that you have done `\selectlanguage{french}`):

On peut le déduire des théorèmes 1 et 2 et de la proposition 3.

- 15 Voilà !

Regarding the upper and lower cases

1 As in `cleveref`, these commands have corresponding uppercased version: `\Crefthename`,
 2 `\Crefthe`, `\nameCrefthe` and `\nameCrefsthe`, similar to `\Crefname`, `\Cref`, `\nameCref`
 3 and `\nameCrefs`, reserved for using at the beginning of a sentence. `\Crefthe` (and the
 4 name-only relatives) can handle case changing automatically: for example, with `\Crefthe`
 5 `[Å]{thm1,thm2,prop3}`, you will get something like

Aux théorèmes 1 et 2 et à la proposition 3

6 Of course you will have to define the `\Crefthenames` separately, for example as:

```
\Crefthename{theorem}[Le]{théorème}[Les]{théorèmes}
\Crefthename{proposition}[La]{proposition}[Les]{propositions}
```

For writing multi-language documents

7 To place hyperlinks at the correct place, `\crefthename` touches the corresponding format
 8 macro `\crefformat` internally, which makes the format language-dependent. If you are
 9 writing multi-language documents, you may consider putting `\crefthename` inside your
 10 language configuration so as to reset it each time you select a new language.

Dealing with existed `cref` / `Cref` names

11 For those preset names defined with `\crefname` / `\Crefname`, such as the ones for `chapter`,
 12 `section` and `subsection`, etc., the optional argument of `\crefthe` / `\Crefthe` shall be use-
 13 less: names defined with `\crefthename` / `\Crefthename` have a `\crefthemark` marking
 14 the definite articles, which also deals with the given preposition ; without `\crefthemark`,
 15 the preposition is simply ignored.

16 `\crefthepatchname{<counters>}` is provided for this purpose. With this, an empty mark
 17 shall be added before the existed singular and plural names. However, it is still recom-
 18 mended to simply redefine the names with `\crefthename` / `\Crefthename`, especially in
 19 multilingual documents.

The relationship with `cleveref`

20 `crefthe` loads `cleveref` automatically and pass related options to it. All its commands, used
 21 without optional arguments, degenerate to those in `cleveref`. For example, `\crefthe{...}`
 22 is the same as `\cref{...}`, and `\crefthename` is the same as `\crefname` if the definite
 23 articles are not specified. That said, you can safely use the command `\crefthe` everywhere
 24 in your document without causing extra trouble.

25 With the package option `overwrite`, user commands in `cleveref` will be replaced by those
 26 offered here, thus you can simply write `\cref` for `\crefthe` – and similarly with `\Cref`,
 27 `\crefname` and `\Crefname`.

Known issues

- 1 ● crefthe currently works for French, Italian, Portuguese (European and Brazilian) and
2 Spanish, certainly more would be added to this list.
- 3 ● The current mechanism does not work for German. The author plans to adopt a more
4 refined approach in later versions in order to support the various situations in German.
5 Meanwhile, you may consider the package `zref-clever`, which has a much more powerful
6 and sophisticated interface for configuring cross referencing.
- 7 ● The names of theorem-like environments are not provided here, you need to define them
8 by yourself. However, users are encouraged to use the [ProjLib](#) toolkit (more specifically,
9 the internal package `create-theorem`), which already handles everything for you.

10 If you run into any issues or have ideas for improvement, feel free to discuss on:

11 <https://github.com/Jinwen-XU/crefthe/issues>

12 or email me via ProjLib@outlook.com.